

## REMARKS

Reconsideration of the present application is respectfully requested.

### Summary of Office Action

Claims 1-48 stand rejected under 35 U.S.C. § 102(b) based on U.S. Patent no. 5, 649, 099 of Theimer et al. ("Theimer"). Claims 12, 42 and 47 stand rejected under 35 U.S.C. § 103(a) based on Theimer in view of "Storage Management Solution for Distributed Computing Environments," October 1996, Hewlett-Packard Journal. Claims 17 and 46 stand rejected under 35 U.S.C. § 103(a) based on Theimer in view of European patent application number EP 1 100001 A2 t.

### Interview Summary

A telephonic interview was conducted between the Examiner and Applicants' representative (the undersigned) on 6/5/2008. The participants discussed claim 1 relative to the cited references, and Applicants proposed to incorporate dependent claim 16 into independent claim 1 in the interests of expediting prosecution. No particular agreement was reached.

### Summary of Amendments

In this response, claims 1, 18, 24, 26-32, 34, 47 and 48 have been amended; claims 5, 6, 8, 16, 22, 23, 33, 36, 37 and 45 have been canceled; and no claims have been added. No new matter has been added.

### Discussion of Rejections

#### Prior Art Rejections

### Claim 1

In response to the above-mentioned interview with the Examiner, claim 1 has been amended essentially to incorporate the limitations of claim 16, as discussed further below, to expedite prosecution. Before discussing the amended claims, however, Applicants would like to explain why they believe the current rejection is incorrect.

Theimer is directed to a technique by which a client can authorize one or more intermediary devices to access a server on the client's behalf. The technique involves the client creating one or more access control programs (ACPs), which contain specifications of delegated access rights. When a server receives a request from an intermediary, the server executes the appropriate ACP to determine whether or not to grant the request.

Theimer does not disclose or suggest the invention as recited in original claim 1, as previously argued. The Office appears to interpret the intermediary in Theimer as the "client" of claim 1 and interprets the server in Theimer as the "policy engine" in claim 1 (see Office Action, p. 4).

First, regarding the limitation "sending the second request and information relating to the set of data from the storage server to a policy engine," the Office contends that Theimer discloses this functionality at col. 15, lines 17-19 (Office Action, p. 4). Applicants respectfully disagree. The cited section only relates to "revocation objects", which are used by clients to revoke access privileges from intermediaries. Col. 15, lines 17-19 discuss how an allocation policy can be established to determine how many revocation objects any given client can have with respect to the server. However,

there is no suggestion in that section, or anywhere else in Theimer, of sending a request (i.e. "second request" in claim 1) and information relating to the set of data from a storage server to a policy engine. In Theimer, the server itself evaluates a revocation object and executes an ACP. As for Theimer's discussion of an allocation policy, Theimer does not disclose or suggest that an allocation policy is ever invoked in response to a request from an intermediary (which the Office interprets as the "client" of claim 1); therefore, the act of invoking an allocation policy in Theimer cannot be read on the above-mentioned "sending . . ." limitation in claim 1.

Second, Theimer also does not disclose or suggest "receiving at the storage server, from the policy engine, a first response indicating a result of the policy engine having implemented a policy based on the information relating to the set of data" (emphasis added). The Office cites the same section of Theimer as mentioned above (col. 15, lines 17-19). However, that section is equally not pertinent to this claim limitation, for the reasons discussed in the preceding two paragraphs.

The only specific response the Office provided to Applicants' above (previous) argument is found on page 2 of the present Final Office Action, which states:

(Column 15, lines 16-24, if they server can support only a limited number of revocation objects, an allocation policy can be established to determine how many revocation objects any given client can have with respect to the server. Any of a number of such allocation policies including pre-allocation of all revocation objects among clients, is possible. No matter what scheme is used, it is important that revocation objects be stored in stable storage, so that they are not inadvertently destroyed, for example through server failures, **which clearly incorporate the bilateral communication between the storage server and the allocation policy**). Office Action, page 2 (emphasis added).

Applicants respectfully submit that the Office's rationale here is incorrect, because the allocation policy mentioned in col. 15, line 17, is not invoked in response to a request from the intermediary. The disclosed process at col. 15, line 17 will not work unless the policy is invoked at the time the revocation object is created, which is necessarily prior to the client request.

For all of the above and previously-stated reasons, therefore, Applicants respectfully submit that the current rejections are incorrect and should have been withdrawn.

#### Amendments

Notwithstanding Applicants' disagreement with the rejections, Applicants have amended certain independent claims in the interests of expediting prosecution. Referring now to the amended claims, the invention as recited in amended claim 1 relates to a storage system in which a separate policy engine retrieves remotely stored data on behalf of a storage server. To understand the context of Applicants' amended claims, one may first refer to Applicants' specification, para. [0045]-[0046], which describes an embodiment as follows:

In certain situations it may be desirable to store some files (or other data) managed by a filer 2 remotely from the filer 2, such as in a separate nearline storage device, instead of in the filer's local storage. Where a file is stored may be determined by a separate data backup application. A policy engine 6 such as described above can be advantageous in situations where files managed by a filer 2 are stored remotely from the filer 2, as will now be described.

In certain embodiments, remotely stored files are replaced in the filer 2 by a "stub" (e.g., a header), and the inode of such a file includes a flag (e.g., an "offline" bit) indicating that the file is actually stored remotely. When the filer 2 receives a request relating to such a file, the filer 2

detects this flag in the inode of the file and responds by sending a corresponding notification to the policy engine 6. In response to this notification, the policy engine 6 obtains the file from the remote storage (if appropriate after applying any applicable policies), and provides the file to the filer 2. The filer 2 then uses the file as appropriate to satisfy the client request.

Thus, claim 1 as amended now recites:

1. (Currently amended) A method of operating a storage server, the method comprising:

receiving at the storage server, from a client, a first request to perform a storage-related operation relating to a set of data;

**responding to the first request at the storage server by using metadata in the storage server to determine whether the set of data is stored externally to, and remotely from, the storage server;**

generating a second request in the storage server in response to determining that the set of data is stored externally to, and remotely from, the storage server;

sending the second request and information relating to the set of data from the storage server to a policy engine, **wherein the policy engine responds to the second request by retrieving the set of data from storage on behalf of the storage server and provides the set of data to the storage server in conjunction with a first response;**

receiving the first response and the set of data at the storage server, from the policy engine, the first response indicating a result of the policy engine having implemented a policy based on the information relating to the set of data; and

sending a second response in accordance with the first response from the storage server to the client. (Emphasis added.)

The cited references do not disclose or suggest using a policy engine that operates on behalf of a storage server to retrieve data that is stored remotely from the storage server, as recited in amended claim 1.

In rejecting dependent claim 16, the Office has cited pieces of unrelated disclosure in Theimer and pieced them together artificially in an effort to read on

Applicants claims; but in so doing, the Office has given no apparent weight to the recited relationships between claim elements in claim 16. Specifically, the Office cites Theimer at col. 14, lines 30-32 for the limitation of "responding to the first request at the storage server by using metadata in the storage server to determine whether the set of data is stored externally to, and remotely from, the storage server." But that section in Theimer has nothing to do with the "policy" mentioned in col. 15, lines 15-20 of Theimer (discussed above). The only instance where a "policy" is mentioned in Theimer is in col. 15, lines 15-20, which relates to managing revocation objects. Yet in the context of col. 14, lines 30-32, there is no "first request to perform a storage related operation" on a revocation object. Furthermore, Applicants find no suggestion in Theimer of any "second request" from the storage server to the policy engine (per claim 1) in the context of col. 14, lines 30-32.

As for the cited col. 138, lines 32-37, that section merely refers to the server checking a value returned by and access control program. That section appears to have no relevance to Applicants' claim limitation of the policy engine responding to a request from the storage server by retrieving a set of data from storage and providing the set of data to the storage server.

Therefore, Applicants respectfully submit that the rejection of claim 16 was improper, and for the same reason, amended claim 1 and all claims which depend on it are thought to be patentable over the cited art.

Independent claims 18, 24 and 34 include limitations similar to the limitations discussed above relative to claim 1. Therefore, claims 18, 24 and 34 and all claims

which depend on them are thought to be patentable decided art for reasons similar to those discussed above.

**Claim 47**

Claim 47 recites:

47. (Original) A storage system comprising:  
a **plurality of storage servers**, each to provide a set of clients with access to corresponding stored data; and  
a policy engine **to receive requests from each of the storage servers**, each request being based on a previous storage-related request received by one of the storage servers from a client, the policy engine configured to respond to each request by implementing one or more of a set of storage-related policies and to send a response to a requesting storage server based on a result of implementing the policy, **wherein one or more of the policies are specific to a particular storage server**, and wherein the storage servers respond to the storage-related requests from clients in a manner synchronous with the responses from the policy engine. (Emphasis added.)

Applicants respectfully maintain their previous arguments regarding claim 47.

The remarks above regarding original claim 1 also generally apply to claim 47.

In addition, the cited art is not seen to disclose, per claim 47, a policy engine receiving requests from each of a plurality of storage servers, and which responds to each request by implementing one or more storage-related policies, wherein one or more of the policies are specific to a particular storage server.

In the present Office Action, p. 19, the Office cites Theimer at col. 8, lines 31-33 and contends, "[S]erver 10 can be, for example, a storage server such as a file server or database server and line 61-62, system 1 can in some embodiments comprise multiple servers and clients)." Assuming the system in Theimer was implemented with multiple

servers, the logical result would be that each server has its own policy engine. So even if the Office's contention is true, there is still no suggestion in Theimer of a single policy engine that services multiple storage servers, and which implements one or more storage-related policies specific to a particular storage server, per claim 47.

The Office also contends that col. 15, lines 16-24 "incorporate the bilateral communication between the storage server in the allocation policy which is preferably remotely located from the server." Office Action, p. 19 (emphasis added). However, Applicants find no disclosure or suggestion in Theimer that the allocation policy is "preferably remotely located from the server". To the contrary, Theimer clearly suggests that, to the extent a policy is used (col. 15, lines 16-24), the policy is implemented within the server itself, not remotely (see also col. 14, lines 23-28). If the Examiner disagrees, Applicants respectfully request that the Examiner specify exactly where the alleged teaching of "preferably remotely located" is found.

For these additional reasons, therefore, claim 47 is thought to be patentable over the cited art.

#### Claim 48

Claim 48 recites:

48. (Currently amended) A method of operating a storage server, the method comprising:  
receiving at the storage server, from a client, a request to perform a storage-related operation relating to a set of data;  
if the first request satisfies a defined criterion, then operating the storage server to invoke a policy engine configured to determine a disposition of the request, the policy engine being external to the storage server, **wherein the policy engine operates to restrict access to the set of data, including restricting ability to open, close and modify the set of data;**



receiving at the storage server a response from the policy engine indicating a disposition of the request; and  
responding to the request in accordance with the response from the policy engine. (Emphasis added.)

The cited references do not disclose or suggest the present invention as recited in claim 48, particularly the limitations that an external policy engine, used with a storage server, restricts access to a set of data by restricting the ability to open, close and modified a set of data. Support for the added limitations can be found in Applicants' specification at, for example, para. [0018, [0024] and [0036]. Therefore, claim 48 is thought to be patentable over the cited art for at least this reason.

Applicants have not necessarily discussed here every reason why every pending independent claim is patentable over the cited art; nonetheless, Applicants are not waiving any argument regarding any such reason or reasons. Applicants reserve the right to raise any such additional argument(s) during the future prosecution of this application, if Applicants deem it necessary or appropriate to do so.

#### Dependent Claims

In view of the above remarks, a specific discussion of the dependent claims is considered to be unnecessary. Therefore, Applicants' silence regarding any dependent claim is not to be interpreted as agreement with, or acquiescence to, the rejection of such claim or as waiving any argument regarding that claim.

Conclusion

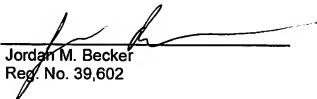
For the foregoing reasons, the present application is believed to be in condition for allowance, and such action is earnestly requested.

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If there are any additional charges, please charge Deposit Account No. 50-2207.

Respectfully submitted,  
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